

## **ENERGY ACCELERATOR**

### **ABSTRACT.**

**[0043]** An apparatus for imparting mechanical vibration on a down-hole drilling system including a body, first and second couplers and a rotating member. The body includes ports configured to pass fluid through the body, and the first and second couplers are configured to couple the body to the down-hole drilling system. The rotating member is located at least partially in the body and is rotatable about an axis of rotation in response to flow of the fluid such that rotation of the rotating member generates mechanical vibration imparted on the down-hole drilling system.